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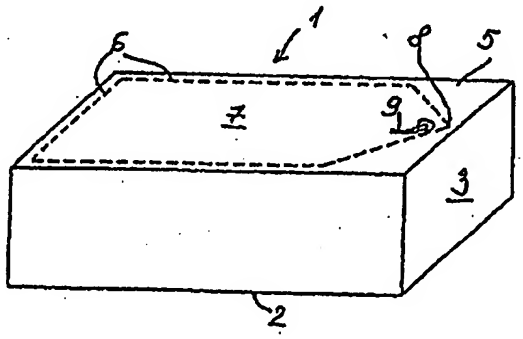
(54) Title: PACKING CONTAINER AND ITS USE

(57) Abstract

A closed packing container (1, 10, 20) for the packaging of comestibles or foodstuffs, made on the whole of layers of paper or cardboard, has on the upper wall (5, 13, 21) an opening line (6, 14, 22), impermeable for the packaged interior contents, created from perforations, grooves, incisions or weakened seams, defining after opening an opened surface (7, 16, 23) which occupies a minimum of 20 % and advantageously 70 % up to 100 % of the surface of the upper wall (5, 13, 21). The opened surface (7, 16, 23) can have a taper (8). The opening line (6, 14, 22) is advantageously situated entirely or in part in close proximity (9, 15) to the perimeter of the upper wall (5, 13, 21) and can be wavy. The opening line (6, 14, 22) and/or the opened surface (7, 16, 23) can be equipped with an opening device (9, 15), either a cutting or tearing device. The package container (1, 16, 20) with a relatively great opened surface (7, 16, 23) after opening is suitable for use as a feeding vessel for small domestic animals.



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Packing container and its use

Technical Field

The invention relates to a packing container for the packaging of comestibles or foodstuffs. The packing container, made up of one unit and consisting of one or several layers of paper or cardboard, is liquid resistant and leak proof as far as the packaged product is concerned, and, if need be, is equipped with metal foil or coating. After being filled, the packing container has a closed form, created from a lower wall and upper wall opposite, between which is set one side wall or more side walls.

The invention also relates to the use of the packing container.

Background Art

Various types of packing container for the wrapping and transport especially of liquid comestibles, for instance, milk, fruit juice, wine and other liquids, including low viscosity liquids and pulp mixtures, are known. It is a question of one-off usage. The packing container, on a base of layers of paper or cardboard, has a liquid resistant lay-out with thermoplastic material, for instance, an external or even internal level of polyethylene, and if necessary can contain other layers or materials depending on the internal contents.

In the present state of technology of the Czech patent no. 281 420 of the firm TETRA PAK, the production of such packing containers is described. From the strip of material the required shape is created which is filled in this same equipment. The completed packing container is then closed with a seal. Subsequently the packing containers are worked into the required finished geometric shape. In the invention mentioned there is an opening device for the packing container, in the case of liquid being packaged, an opening strip after whose removal a seam opens and forms the pouring outlet.

Another well-known way of wrapping drinks or liquids is used by the firm SIG, which supplies to the producer individual pieces of the opened packing container above and below. The producer puts together the packing container into an equilateral lengthwise shape and the packing container is created on the filling and packaging equipment with

welded lengthwise walls and base, if necessary with an opening element on the upper part of the packing container. This half-finished product is filled, and if necessary an opening element is created in the upper part of the packing container. Then the upper part is sealed into the finished closed shape of the packing container.

The existing types of these packing containers for one-off usage, made on the whole most often in the shape of cartons, are equipped at the top part with an opening device, for instance, by means of cutting, tearing or other flexible parts for the opening of the packing container and creating of a feeding, pouring or sucking outlet. It is possible to transport the packing containers, store them and after opening them to consume them.

The pouring, sucking or discharging outlet is usually situated in a fold at the upper part of the packing container, i.e. in the reinforced part of the packing container. The size of the outlet is connected with the overall size of the packing container and character of the packaged foodstuff. A sucking outlet is generally of 5 mm diameter, a pouring outlet usually of a droplet type shape for squeezing of raggle out has a length of 30 mm for a largest width of around 15 mm, i.e. a surface of up to 500 mm^2. It is possible also to acquire a pouring outlet by cutting the folded back upper corner of the packing container with a length of up to 50 mm.

In order that unwanted spillage of the liquid or pulpy contents does not take place while opening the packing container, existing packing containers have the users limited access to the packaged product.

The aim of this invention is to find a new type of packing container for comestibles or foodstuffs, for one use, which allows better access to the packaged product, and, if necessary, the further use of the packing container after its opening.

Summary of the Invention

This task is solved by the invention submitted of a closed liquid-resistant packing container from layers of paper or cardboard, which consists of a base and opposite upper walls, between which is a side wall or more side walls, according to this invention. The subject of this invention resides in the fact that in the upper wall of the packing container there is an opening line, inaccessible to the interior contents of the package, created from perforations, grooves, incisions, or weakened seams, and defining the opening surface,

which is peripherally closed and occupies a minimum of 20%, with advantage of which 70% is of the surface of the upper wall, if necessary it is identical to the upper wall.

The main advantage of this invention is that the packaged product is easily accessible and at the same time it is possible to use the existing production technology of packing containers, their filling, storage and transport, through minimal modification of the equipment and existing packing containers.

It is advantageous if the opening surface contains at least one tapered part facilitating the opening of the opening surface.

It is also advantageous if the opening line is situated for a part of its length or for the whole of its length in immediate vicinity of the perimeter of the upper wall, so the opening surface gets closer to the surface of the upper wall, in order that the resulting outlet is relatively large.

Furthermore it is advantageous if the opening line is wavy, which can facilitate the line of tearing or cutting in the event of large dimensions.

It is also advantageous if the opening line and/or opening surface is equipped with an opening device for the emptying of the contents of the packing container, e.g. with a tearing or cutting device.

In the case of a oblong packing container it is advantageous if it upper wall is created from one of two of its larger rectangular side surfaces, with the opposite side surface then creating the base of the package. The opening surface is then installed on the larger surface.

In the case of a cylindrical package it is advantageous if its upper wall is created of one surface of cylindrical package with a circular outlet, since the opposite surface creates the base. Then the opening surface can be relatively large in the stable package.

The principle of this invention resides in the fact also that it can be used after opening as a feeding vessel for small domestic animals, e.g. dogs or cats. This is made possible by the optimally large opening surface and stability of the package.

Brief Description of Drawings

The invention is described in detail further to its exemplary embodiment, made clear on the enclosed schematic drawings which represent

fig. 1. axonometric view of the rectangular packing container with opening lines,

fig. 2. view above of the rectangular packing container with opening lines and cuttin opening device,

fig. 3. axonometric view of the rectangular packing container with opening lines and opening device for tearing,

fig. 4. axonometric view of the cylindrical pacing container with conicall upper wall and opening device for tearing,

fig. 5. axonometric view of the packing container according to fig. 4, however with its opening surface the whole conicall part, and

fig. 6 axonometric view of the cylindrical packing container with wavy opening surface.

Description of the Preferred Embodiment

Example 1

(Fig. 1)

Packing container 1 in the shape of a right parallelepiped is made up as one whole from several supporting layers of paper or cardboard which ensure the required shape, strength and rigidity of the packing container. Packing container 1 is equipped on the outside with thermoplastic material in the form of foil from polyethylene for reasons of the non-permeability of the interior contents. Packing container 1 is used for the packaging of fortified water i.e. water enriched with insufficient elements of nutrition, for small domestic pets, e.g. dogs.

The feature special to packing container 1 consists of a flat rectangular base 2, two shorter rectangular side walls 3, two longer rectangular leading walls 4 and a rectangular upper wall 5 in which opening line 6 is to be found.

Opening line 6 is made up of perforations, grooves or cuts in the external supporting layers of packing container 1 in such a way that its non-permeability is not broken. Opening line 6 outlines the outlet closure, during later opening of package container 1 by opening surface 7, representing the principle part of the upper surface of surface 5. This opening surface 7 is situated in immediate proximity to one side wall 3 and both leading surfaces 4, from where roughly two thirds of the way along there is a triangular tapering at an acute angle, for instance 30 degrees in the direction of the second side wall 3 to the tapering 8, parallel with the side wall 3, eventually the tapering 8 is elongated until a vanishing point.

When opening package container 1 the whole of opening line 6 is cut into and the enclosed opening surface 7 defined by the line after incision is taken out. Or taper 8 is taken out and the triangular part of opening line 6, and the result is a splayed part which doubles back outside of package container 1 and is pulled in the direction of the opposite side wall 3 to the completely removed upper surface 5 of package container 1 in the opening surface 7. Taper 8 can be equipped with a tearing device 9 e.g. a tearing tape firmly fixed to one part of the upper surface 5, which is torn and with whose help the opening line is pulled in a sideways direction to the opposite side wall 3.

The opened surface 7 forms the outlet, taking up roughly 80 % of the surface of the upper wall 6, which is suitable as a feeding outlet for small domestic animals, dogs or cats.

The outlet of opened surface 7 should always take up a minimal surface regarding the dimension of package container 1, i.e. base 2 to the side walls 3, 4 and the upper surface 5. It is suitable as a feeding outlet for small domestic pets, because in this case package container 1 after being opened serves as a feeding vessel.

Package container 1 is also suitable both for liquid, and solid, powdery or decidedly dry foodstuffs or products.

Example 2

(Fig. 2)

Package container 1 containing polyethylene and metal foil inside, is shaped identically with package container 1 set forth in the previous case, operated with this difference, that the region of taper 8 is equipped with an opening device 9 in the shape of a rigid rectangular object from synthetic material, which is on half of its surface firmly fixed to the upper surface 5 and in the unfixed half is equipped with a rigid cutting point.

After bending the free half of the opening device 9, the spike cuts into the taper 8 with the adjacent oblique edge, the cut part folds outside of the upper surface 5 of package container 1 and by pulling in the direction of the opposite side wall 3 the whole of tearing line 6 is torn in the places of the perforations, grooves or incisions in such a way that by doing so an outlet results in the opening surface 7 which occupies the principle part of the upper wall 5 of package container 1. Package container 1 can be used as in the previous example, however it can also be used for any kind of liquid foodstuff, semi-liquid, pulp,

lubricant, and with pieces of sold foodstuff, for instance, fruit, vegetables, meat, nuts and the like.

Example 3

(Fig. 3)

Package container 1 corresponds to the previous example with the difference that taper 8 of the opening line 6 is taken to a point, in which a tearing open device 9 is firmly fixed.

Example 4

(Fig. 4)

Packing container 10 shown in fig. 4 is identical with regard to materials with the operation of the preceding example. It is, however, manufactured from a flat circular base 11, vertical cylindrical side wall 12 and upper wall 13 in the shape of a cone, equipped with opening line 14 created from perforations, grooves or incisions. In close proximity to the perimeter of the base of the cone of upper surface 13 is created a circular perimeter opening line 14a which the perimeter of the base of the cone follows. From the top of the cone there is another linear opening line 14b finishing in a circular opening line 14a while this linear opening line 14b is created advantageously in proximity to the fold of the cone upper surface 13 or seam. The opening line 14 can be created from grooves, perforations or incisions in the upper part of package container 13, carried out to meet the requirement of impermeability of the package container for the interior contents. At the top of the conical upper surface 13 is a firmly fixed tearing device 15 of the cylindrical package container, e.g. a tearing tab.

By means of the tearing tab the linear opening line 14b is first torn and subsequently the circular tearing line 14a, so that the conical opening surface 16 is torn off or removed. In place of the perimeter opening line 14a there now results a circular outlet, occupying roughly 90% of the surface in projection from the upper surface 13, parallel to the flat circular base 11.

Packing container 10 is appropriate for frozen products.

Example 5

(Fig. 5)

An alternative to the previous operation of the packing container 10 is possible, shown in fig. 5, where the opening line 14' is created in such a way that the circular line 14a', is taken as a weakened seam between the side cylindrical wall 12 and the circular principle conical upper surface 13, and the linear opening line 14b' is taken up to the circular opening line 14a'.

After pulling back the tearing tab the whole of the conical upper surface 5 is removed, and the result is a circular outlet of the cylindrical packing container 10, completed by the upper edge of the cylindrical side wall 12 which is suitable also for solid foodstuffs, for instance, pudding, which it is possible to take out in one piece

Example 6

(Fig. 6)

Packing container 20 shown in fig. 6 is identical in respect of materials with the preceding examples of the operation of the cylindrical packing container 20. However it has the shape of a cylinder with flat circular base 11, cylindrical side wall 12 and flat circular upper surface 21, in which a wavy opening line 22 is arranged, which traces the perimeter of the circular upper wall 21. The wavy opening line 22 is created from grooves, perforations or incisions and can be equipped with an opening device 19, e.g. a tearing tab, tearing strip etc. By pulling the tearing device 19 the wavy opening line 22 is pulled the whole of its length and after removal of the wavy opening surface 23 a wavy circular outlet is formed occupying roughly 90% of the surface of the flat circular upper surface 21.

This packing container 20 can be used for foodstuffs of a liquid base with firm pieces of meat, fruit or vegetables.

Packing container 20 is also suitable for the packaging of liquids and foodstuffs for domestic animals, especially dogs and cats, because after removing the wavy opening 23 the result is a corresponding wavy outlet, suitable as a feeding vessel.

The design of the examples shown above does not restrict further variants and combinations created and made up of further changes and modifications to the packing container within the context and the extent of the idea of the claims of patent of this invention.

Industrial Applicability

The solution is intended for the packaging of foodstuffs, both liquids, e.g. mineral water, wine, fruit juice, juices and other drinks, and less viscous liquids, e.g. fruit concentrates and vegetable juice, fluids or semi fluids e.g. chocolate or nut pastes, as well as soups with pieces of vegetable, or liquid or semi liquid foodstuffs with pieces of fruit, vegetable, nuts and meat. The packing container can contain foodstuffs or contents with very high viscosity up to solid, e.g. yogurt, mashed potato, creams, puddings and the like. The packing container is designed not only for foodstuffs for human consumption but also for liquids and possibly the foodstuffs of small domestic animals, especially dogs and cats. It is also possible to use the packing container for the packaging of firm or powdery products, or individual pieces of products.

Related symbols

1 oblong packing container
2 rectangular base
3 shorter side walls
4 longer side walls
5 upper wall
6 opening line
7 opened surface
8 taper
9 opening device 9 of oblong packing container 1
10 cylindrical packing container 10 with pyramidal upper wall 13
11 circular base
12 cylindrical side wall
13 conical upper wall
14 opening line 14 of conical upper surface
14a circular opening line
14b linear opening line
15 opening device 15 of cylindrical packing container
16 opened surface 16 of conical upper surfac
20 cylindrical packing container 20 with flat circular upper wall 21

21 flat circular upper wall

22 wavy opening line

23 wavy opened surface

CLAIMS

1. A packing container, designed especially for the packaging of comestibles and foodstuffs, made on the whole of one or several layers of paper or cardboard, which is liquid resistant and impermeable for the packaged product, if necessary is equipped with metal foil, after filling has a closed shape, created from a flat base, opposite upper wall, between which is arranged one side wall or more side walls, is

characterized by that in the upper wall (5, 13, 21) there is an opening line (6,14,22) impermeable for the interior packaged contents, made from perforations, grooves, incisions or weakened seams, and defining after opening an open surface (7,16,23) which is peripherally closed and occupies a minimum of 20 % of the upper wall (5, 13, 21).

2. The packing container according to claim 1 is **characterized by that** the opened surface (7, 16, 23) occupies a minimum of 70 % of the surface of the upper wall (5, 13, 21).

3. The packing container according to claim 1 is **characterized by that** the opened surface (7, 16, 23) is identical with the upper wall (5, 13, 21).

4. The packing container according to the appropriate combination of the preceding claims 1 to 3 is **characterized by that** the opening surface (7, 16 23) contains at least one taper (8).

5. The packing container according to the appropriate combination of the preceding claims 1 to 4, is **characterized by that** the opening line (6,14, 22) is situated in part of its length in close proximity to the perimeter of the upper wall (5, 13, 21).

6. The packing container according to the appropriate combination of the preceding claims 1 to 4 is **characterised by that** the opening line (6,14,22) is situated along the whole length in close proximity to the perimettter of the upper wall (5,13,21).

7. The packing container according to the appropriate combination of the preceding claims 1 to 6 is **characterized by that** the opening line (6, 14, 22) is wavy.

8. The packing container according to the appropriate combination of the preceding claims 1 to 7 is **characterized by that** the opening line (6, 14, 22) and/or the opened surface (7, 16, 23) is equipped with an opening device (9, 15).

9. The packing container according to the appropriate combination of the preceding claims 1 to 8 is **characterized by that** the upper wall (5) is created in one of two of its larger rectangular side surfaces, by which the opposite side surface forms the base (2) of the packing container (1).

10. The packing container according to the appropriate combination of the preceding claims 1 to 8 is **characterized by that** the upper wall (13, 21) of the cylindrical packing container is created on one of the surfaces with the circular perimeter, while the opposite surface forms the base.

11. Use of the packing container according to the appropriate combination of the preceding claims 1 to 10 as a feeding vessel for small commercial animals or domestic pets.

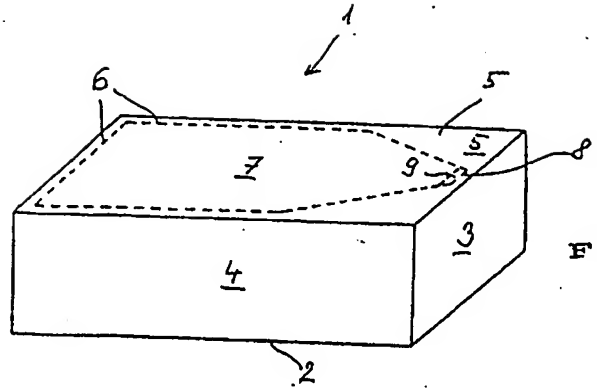

Fig.1

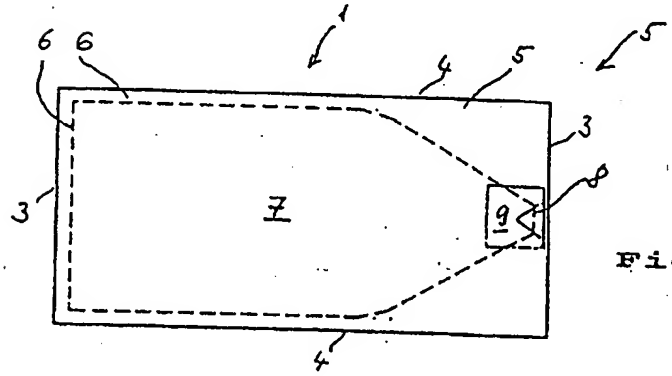

Fig.2

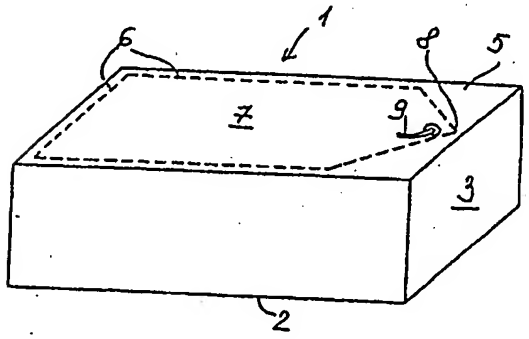

Fig.3

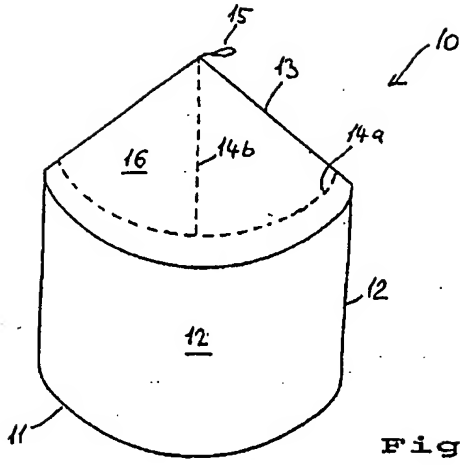

Fig.4

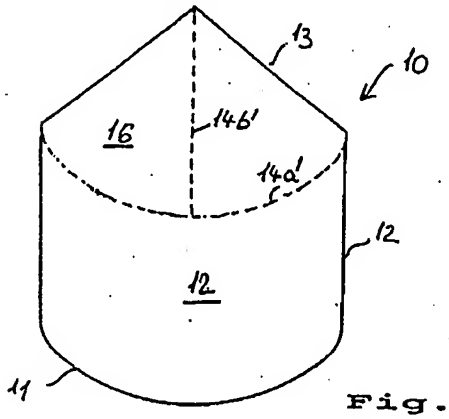

Fig.5

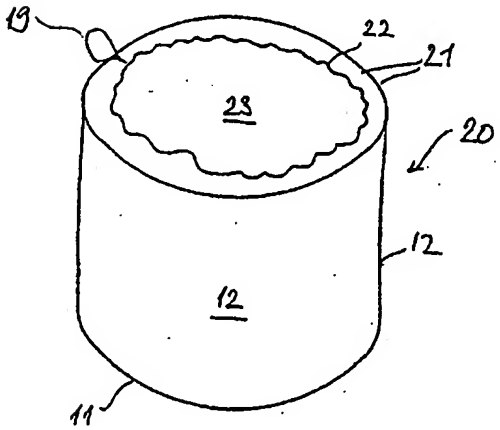

Fig.6

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CZ 99/00051

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D17/40 B65D5/54 B65D5/70

According to International Patent Classification (IPC) or to both national classification and IPC

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Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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